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Docket No.: 0171-1277PUS1
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Hideo SUZUKI

Application No.: 10/580,864

Confirmation No.: N/A

Filed: May 26, 2006

Art Unit: N/A

For: SULFOXYALKYLTHIOPHENE AND
PROCESS FOR PRODUCING THE SAME

Examiner: Not Yet Assigned

LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Subsequent to the filing of the above-identified application on May 26, 2006, attached hereto is an English Translation of the International Preliminary Report on Patentability issued by the International Bureau on behalf of the International Searching Authority. Please make this document of record for the above-identified application.


Application No.: 10/580,864

Docket No.: 0171-1277PUS1

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or to credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Dated: November 6, 2006

Respectfully submitted,

By 
Gerald M. Murphy, Jr. Reg. No. 21,066
Registration No.: 28,977
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road, Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant

Attachment(s)

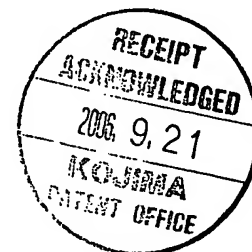
From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rules 44bis.3(c) and 72.2)

To:

KOJIMA, Takashi
Ginza Ohtsuka Bldg. 2F
16-12, Ginza 2-chome
Chuo-ku, Tokyo 1040061
JAPON



Date of mailing (day/month/year)
08 September 2006 (08.09.2006)

Applicant's or agent's file reference
FAP-4052

IMPORTANT NOTIFICATION

International application No.
PCT/JP2004/017063

International filing date (day/month/year)
17 November 2004 (17.11.2004)

Applicant

NISSAN CHEMICAL INDUSTRIES, LTD. et al

1. Transmittal of the translation to the applicant.

- ☐ The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).
- ☒ The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

EP, KR

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Masashi Honda

Facsimile No. +41 22 338 82 70

Facsimile No. +41 22 338 82 70

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference FAP-4052	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2004/017063	International filing date (day/month/year) 17.11.2004	Priority date (day/month/year) 10.12.2003
International Patent Classification (IPC) or national classification and IPC C07D333/16		
Applicant NISSAN CHEMICAL INDUSTRIES, LTD.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>7</u> sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input checked="" type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/017063

Box No. 1

Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:

- ☐ international search (Rule 12.3 and 23.1(b))
☐ publication of the international application (Rule 12.4)
☐ international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

☒ the international application as originally filed/furnished

☐ the description:

pages _____ as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ the claims:

nos. _____ as originally filed/furnished

nos.* _____ as amended (together with any statement) under Article 19

nos.* _____ received by this Authority on _____

nos.* _____ received by this Authority on _____

☐ the drawings:

sheets _____ as originally filed/furnished

sheets* _____ received by this Authority on _____

sheets* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. IV Lack of unity of invention

1. ☐ In response to the invitation to restrict or pay additional fees the applicant has:
- ☐ restricted the claims.
 - ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☐ neither restricted the claims nor paid additional fees.
2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is:
- ☐ complied with.
 - ☒ not complied with for the following reasons:

The inventions set forth in claims 1 to 6, 8 and 9 pertain to compounds that are represented by formula (1), to a method for the production thereof, or to intermediates of the compounds in question. Meanwhile, the invention set forth in claim 7 pertains to a method for producing intermediates of the compounds represented by formula (1). Herein, the intermediates themselves are considered to constitute the only technical feature that is common to both groups of inventions; however, the intermediates in question are well known (refer to C. G. M. JANSSEN et al., Rucl. Trav. Chim. Pays-Bas, 1979, 98 (7-8), pages 448 to 451), and thus cannot be a special technical feature. Such being the case, these two groups of inventions cannot be said to be so linked as to form a single general inventive concept.

[Refer to the Supplemental Box]

4. Consequently, this report has been established in respect of the following parts of the international application:
- ☒ all parts.
 - ☐ the parts relating to claims Nos. _____

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International application No.

PCT/JP2004/017063

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1, 3, 5-9	YES
	Claims	2, 4	NO
Inventive step (IS)	Claims	1, 3, 5-9	YES
	Claims	2, 4	NO
Industrial applicability (IA)	Claims	1-9	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)			
<p>The opinions expressed in the present report were formed based on the disclosures in the following documents, which are cited in the international search report.</p>			
<p>Document 1: C. G. M. JANSSEN et al., Rucl. Trav. Chim. Pays-Bas, 1979, 98 (7-8), pages 448 to 451</p>			
<p>Document 2: Y. IKENOUE et al., Synth. Met., 1989, 30, pages 305 to 319</p>			
<p>Document 3: P. BAEUERLE, Adv. Mater. 1992, 4 (2), pages 102 to 107</p>			
<p>Document 4: T. X. NEENAN and G. M. WHITESIDES, J. Org. Chem., 1988, 53, pages 2489 to 2496</p>			
<p>Claims 2 and 4</p> <p>Document 1 presents 3,4-bis(3-hydroxylpropyl) thiophenes (compound (6e)); consequently, the inventions set forth in claims 2 and 4 lack novelty in the light of the disclosures in document 1.</p>			
<p>Claims 1, 3, 5, 6, 8 and 9</p> <p>The inventions set forth in claims 1, 3, 5, 6, 8 and 9 differ from the invention presented in document 1</p>			

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
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in that 1-sulfoxyalkyl groups have been substituted into position 3 and position 4 of the thiophene skeleton in the inventions set forth in the abovementioned claims.

Meanwhile, document 2 presents conductive polymers that include a 1-sulfoxyalkyl-substituted thiophene derivative as a constituent monomer; however, document 2 does not present derivatives wherein both position 3 and position 4 have been substituted, and does not suggest introducing substituent groups into both position 3 and position 4 of the derivatives presented therein.

Likewise, document 3 also describes the formation of polymers that include a thiophene derivative as a constituent monomer, but does not in any way mention the abovementioned substituent groups.

Such being the case, it cannot be said to be easy for a person skilled in the art to conceive of the inventions set forth in claims 1, 3, 5, 6, 8 and 9 in the light of only the disclosures in the documents in question.

Consequently, the inventions set forth in claims 1, 3, 5, 6, 8 and 9 involve an inventive step in relation to the disclosures in documents 1 to 3.

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Claim 7

The invention set forth in claim 7 differs from the invention presented in document 1 with regards to the specific method for the production thereof.

Meanwhile, document 4 presents compounds wherein substituent 1-methine groups have been substituted into positions 3 and 4 of the thiophene skeleton; however, document 4 does not in any way suggest reducing the substituent 1-methine groups in order to form substituent

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

methylene groups. Such being the case, it cannot be said to be easy for a person skilled in the art to conceive of the invention set forth in claim 7 in the light of the disclosures in documents 1 and 4.

Consequently, the invention set forth in claim 7 involves an inventive step in relation to the disclosures of documents 1 and 4.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Box IV.3

Consequently, the present application is considered to include two inventions that do not conform to the requirement of unity of invention.